

Novel H1N1 Influenza Pandemic: The Public Health Perspective

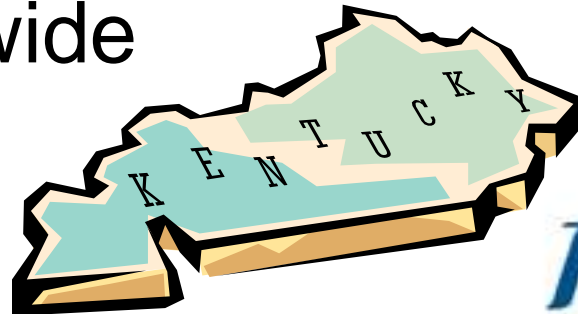
Governor's Pandemic Influenza Summit
September 3, 2009

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KY's H1N1 Snapshot: Sept. 2009

- Almost all influenza this summer is H1N1, per statewide surveillance and testing at KDPH's Division of Laboratory Services
- Outbreaks in schools, correctional facilities and other institutional residential settings
- Progression from containment to mitigation phase, due to sustained persistence of human-to-human transmission
- Transition from individual case reporting to reporting by statewide activity level



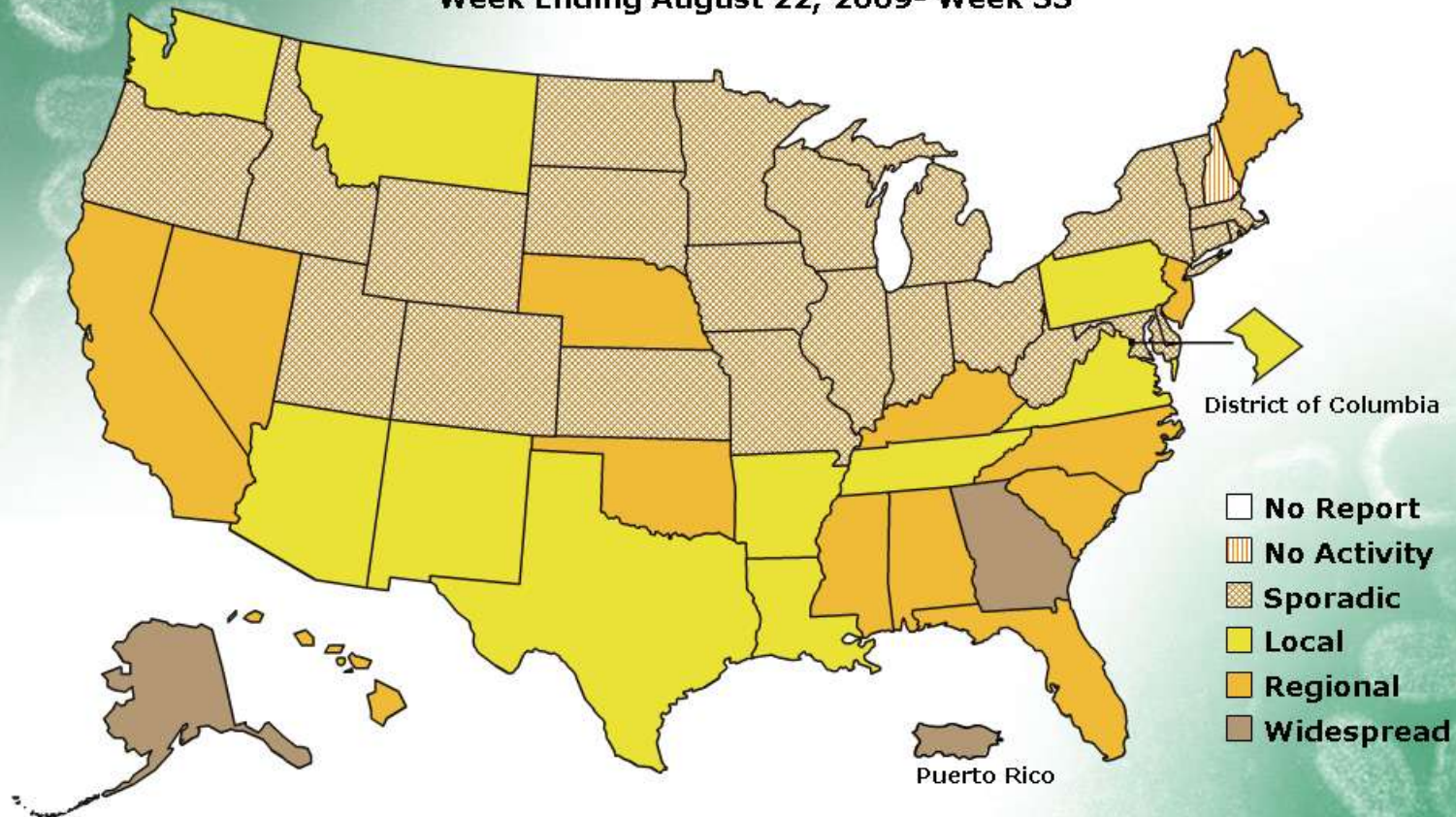
KY: Regional Flu Activity in Summer!

FLUVIEW



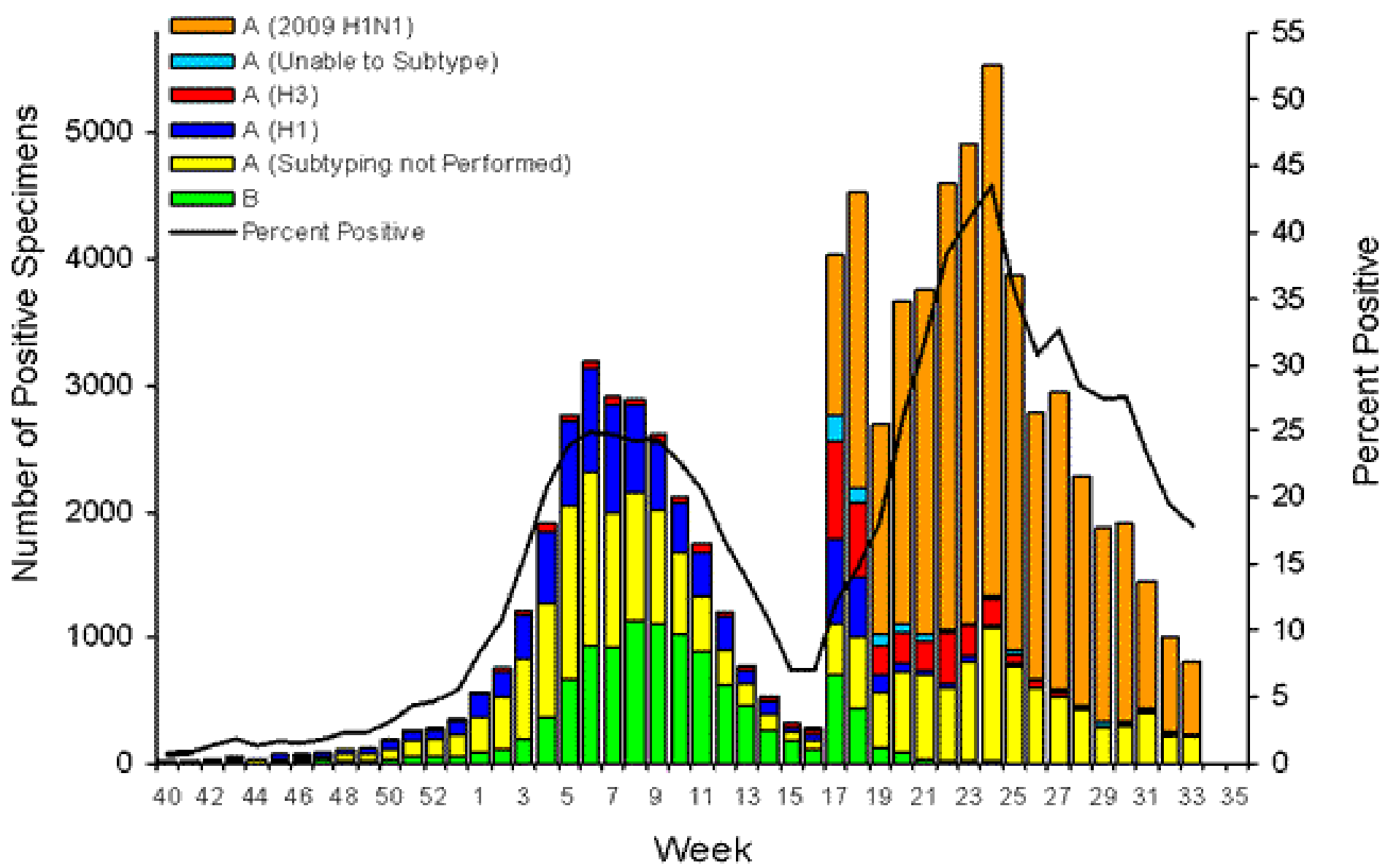
A Weekly Influenza Surveillance Report Prepared by the Influenza Division
Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*

Week Ending August 22, 2009- Week 33



*This map indicates geographic spread and does not measure the severity of influenza activity.

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2008-09



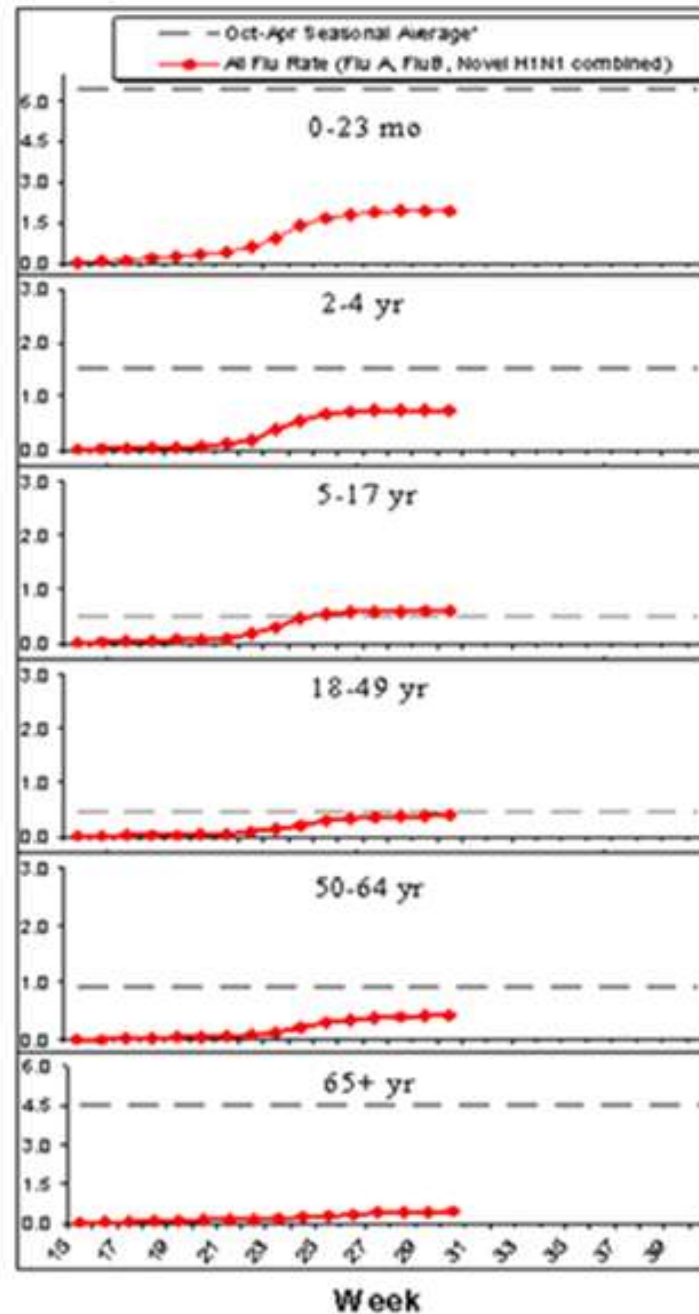
Compare & Contrast: H1N1 vs. Seasonal

- Similar mechanism of spread
- Comparable severity of illness
- Attack rate for H1N1 likely higher, because more of the population is susceptible
- Incidence of H1N1 infection highest in children
- Incidence of H1N1 infection lowest in seniors
- More complications for illness in pregnant women and those with chronic diseases
- Similar public health strategies



EIP Influenza Laboratory-Confirmed Cumulative Hospitalization Rates, Spring/Summer 2009

Rate per 10,000 Population**



Pandemic Influenza Planning: All Sectors

- Kentucky Emergency Management: Lead agency for all hazards
- State pandemic influenza plan since 2003, updated in April 2007 and July 2008, with input from multidisciplinary stakeholder group
- 50 community-based summits sponsored by local health departments held throughout the commonwealth in summer 2006
- Each local health department planning; communities should prepare to be self-sufficient



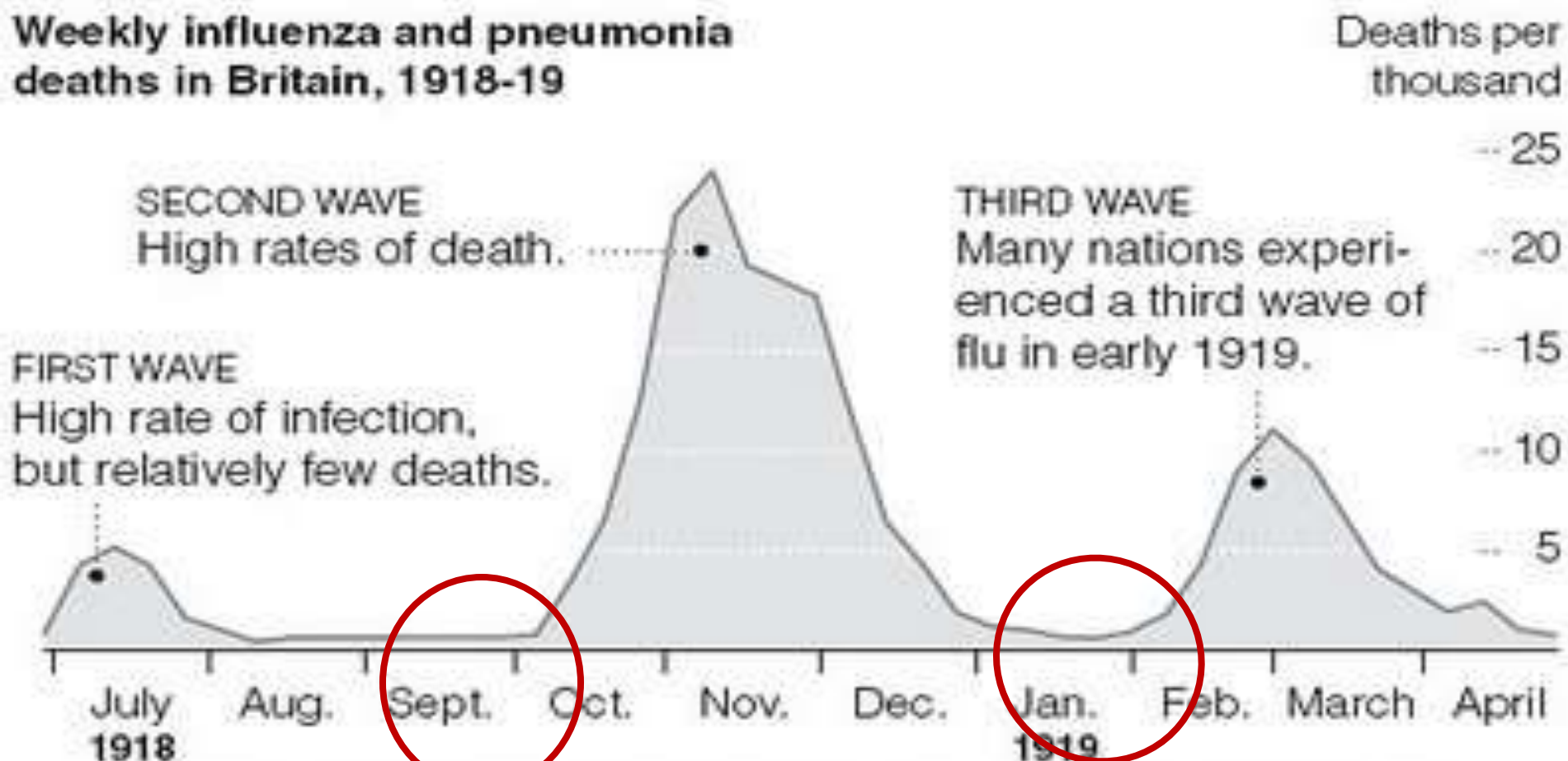
Worst Case Scenarios

- Attack rate of 20-40% (40% of the population ill, probably in waves weeks to months apart)
- Virulence of H1N1 virus increases, so that severity is greater than seasonal influenza
- H1N1 virus becomes resistant to antiviral medicines
- Kentucky Health Projections:
 - Deaths: 3000 – 7000
 - Hospitalizations: 9,200 – 21,400
 - Outpatient visits: 455,000 – 1.06 million
- Kentucky Economic Projections:
 - Infrastructure: Thousands at home either ill or caring for ill
 - Potential economic losses in the billions \$\$\$

The 1918 Pandemic

The influenza pandemic of 1918 spread across Europe, Asia and North America in three distinct but uneven waves, and was fatal for about 2 percent of those who caught it. Global data is incomplete, but death rates in Britain hint at the severity of the three waves.

Weekly influenza and pneumonia deaths in Britain, 1918-19



Sources: *Emerging Infectious Diseases*; Jeffery K. Taubenberger and David M. Morens

THE NEW YORK TIMES

Kentucky's Response: Spring 2009

- Pandemic influenza plan implemented
- KDPH Department Operations Center activated April 27-May 15
- First confirmed case in week before Derby
- Shipments of medicines and supplies received from federal gov't May 1-2
- By containment and communication strategies, likely slowed virus spread until schools dismissed for summer



Public Health Strategies

3 Public Health strategies for successfully responding to an influenza pandemic:

- Antiviral medicines
- Vaccine
- Behavioral interventions that decrease spread
 - Individual health behaviors
 - Community-based mitigation interventions, such as “social distancing,” and other activities

Antivirals: Treatment for Flu

- Antiviral medicines do not “cure” the flu, but help to lessen flu’s severity and course
- To be effective, antivirals should be given ASAP after first symptoms develop
- H1N1 appears to be susceptible to oseltamivir (Tamiflu) and zanamivir (Relenza), so far
- Antivirals are available in limited supply, though supply is increasing
- Gov’t-purchased antivirals can be used if commercial supplies depleted



Novel H1N1 Vaccine

- Expected to be available from the federal government through public health in the fall
- Public & private partnership needed for vaccine coverage
- Demand could exceed supply, necessitating the limitation of first shipments to target groups
- *Delivery will be complicated by simultaneous administration of seasonal flu vaccine*
- 2 doses likely required for immunity





H1N1 Vaccine Target Groups

- Target Groups, when vaccine becomes available:
 - pregnant women
 - household contacts and caregivers of children <6 mos.
 - health care workers
 - persons 6 mos.-24 years
 - persons 25-64 yrs. w/ a chronic medical condition
- Priority Groups, if limited vaccine availability:
 - pregnant women
 - health care workers with direct patient contact
 - household contacts and caregivers of children <6 mos.
 - children 6 mos.- 4 years
 - children 5-18 yrs. w/ a chronic medical condition

Challenges of Vaccine Administration

- Complexity of administering both seasonal and novel H1N1 vaccine during the same season with differing risk groups
- Logistics of enrolling providers to give vaccine: KHELPS- www.khelps.chfs.ky.gov
- Logistics of distributing vaccine to providers
- Logistics of tracking vaccine uptake and distribution
- Communications at all levels

Communication Messages

- Separation of seasonal flu and H1N1 flu vaccine messaging, including both similar and different risk groups
- Recommendation for potentially 3 influenza vaccinations for some risk-groups
- Risks versus benefits of the vaccines
- Vaccine availability, timing and administration sites



Behavioral Interventions

Promoting barriers to spread, from individual level to community:

- Hand washing
- Personal Protective Equipment (masks, etc..) for health care workers
- Isolation and treatment of ill persons at home, when feasible
- Dismissal of students from school and employees from work: social distancing

Targeted Layered Containment (TLC):

The sum of various strategies is likely to be greater than the parts.

How every Kentuckian can prepare. . .

Advice for both seasonal and pandemic influenza

- **Wash hands frequently**
- **Cough / sneeze into tissue or elbows**
- **Avoid crowds during outbreaks**
- **If sick, stay home from work / school**
- **Develop an “all hazards” emergency preparedness family plan and kit**
- **Get a seasonal flu immunization each fall**

Community-Based Mitigation Interventions: Balancing Act

Examples of activities that promote distancing:

- School dismissals
- Workplace closures
- Self-isolation strategies



Unintended consequences:

- Economic and personal impact
- Disproportionate impact among vulnerable populations

Closing Thoughts

- Current status:
 - Transmission mechanisms and severity seem comparable to seasonal influenza
 - Higher incidence in children; more complications in pregnant women and in those with chronic diseases
- Situation rapidly evolving
 - Maintain vigilance while waiting to see what clinical course the virus takes (not alarmed, but concerned)
- Prepare and respond appropriately now
 - A pandemic affects all sectors of society, so all should share in the responsibility of addressing the challenges
 - A prepared community is stronger, because it is better prepared to deal with any health threat



Kentucky Public Health

Prevent. Promote. Protect.